

**Sonos, Inc.’s Opp’n to Google LLC’s
Motion *In Limine* No. 1**

EXHIBIT A

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

GOOGLE LLC,

Plaintiff and Counter-defendant,

v.

SONOS, INC.,

Defendant and Counter-claimant.

Case No. 3:20-cv-06754-WHA
Related to Case No. 3:21-cv-07559-WHA

**OPENING EXPERT REPORT OF
DR. KEVIN C. ALMEROOTH**

1 As shown, after selecting the “Evening” group, the Sonos S2 app indicated that the “Evening”
2 group had been invoked by displaying a single group tile for the “Kitchen” and “Master Bedroom”
3 players and highlighting the tile in brown. I also observed that, after the “Evening” group was
4 invoked, the “Master Bedroom” player stopped playing audio (thereby confirming that the
5 “Kitchen” and “Master Bedroom” players stopped playing audio in accordance with the “Morning
6 Group”) and then the “Kitchen” and “Living Room” players both began playing the same song
7 (which was the same song previously being played on the “Kitchen” and “Master Bedroom”
8 players in accordance with the “Morning” group at the time of invocation) and it sounded to me
9 as though the “Kitchen” and “Living Room” players were outputting audio in synchrony with one
10 another.

11 796. The operation and functionality I observed during the above-described testing is
12 consistent with the operation and functionality described in Sonos’s First and Second
13 Supplemental Responses to Google’s Interrogatory No. 13, and thus, further confirms my opinion
14 that opinion that as of June 2020 (i) the Sonos One, One SL, Play:1, Play:3, Play:5, Five, Move,
15 Roam, Beam, Playbar, Playbase, Arc, Connect, Port, Connect:Amp, Amp, SYMFONISK table
16 lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker each practice at least Asserted
17 Claim 1 of the ‘885 Patent; and (ii) third-party computing devices (e.g., iOS and Android
18 smartphones) installed with the Sonos S2 app practice each of the Asserted Claims of the ‘966
19 Patent.

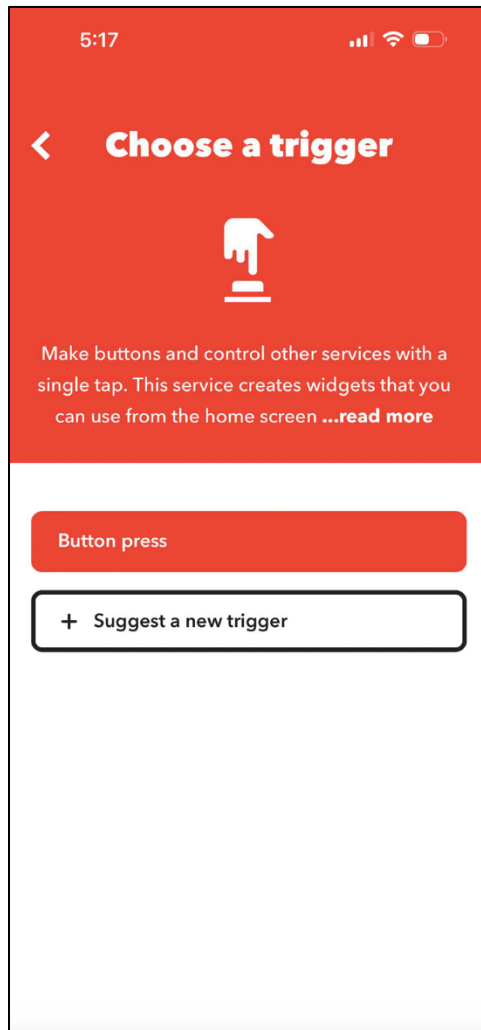
20 797. Lastly, during a discussion with Mr. Nick Millington, who is Sonos’s Chief
21 Innovation Officer, I asked Mr. Millington various questions related to the commercial
22 implementation of Sonos’s “saved groups” feature and the answers Mr. Millington provided
23 further confirmed my opinion that Sonos practices Asserted Claim 1 of the ‘885 Patent and the
24 Asserted Claims of the ‘966.

25 **XVIII. COMPARABILITY OF IFTTT APPLETS**

26 798. I have been asked to review the “Applets” provided by “IFTTT” to determine
27 whether they are technologically comparable to the claimed technology of the ‘885 and ‘966
28 Patents. According to the IFTTT website, “IFTTT is short for If This Then That, and is the best

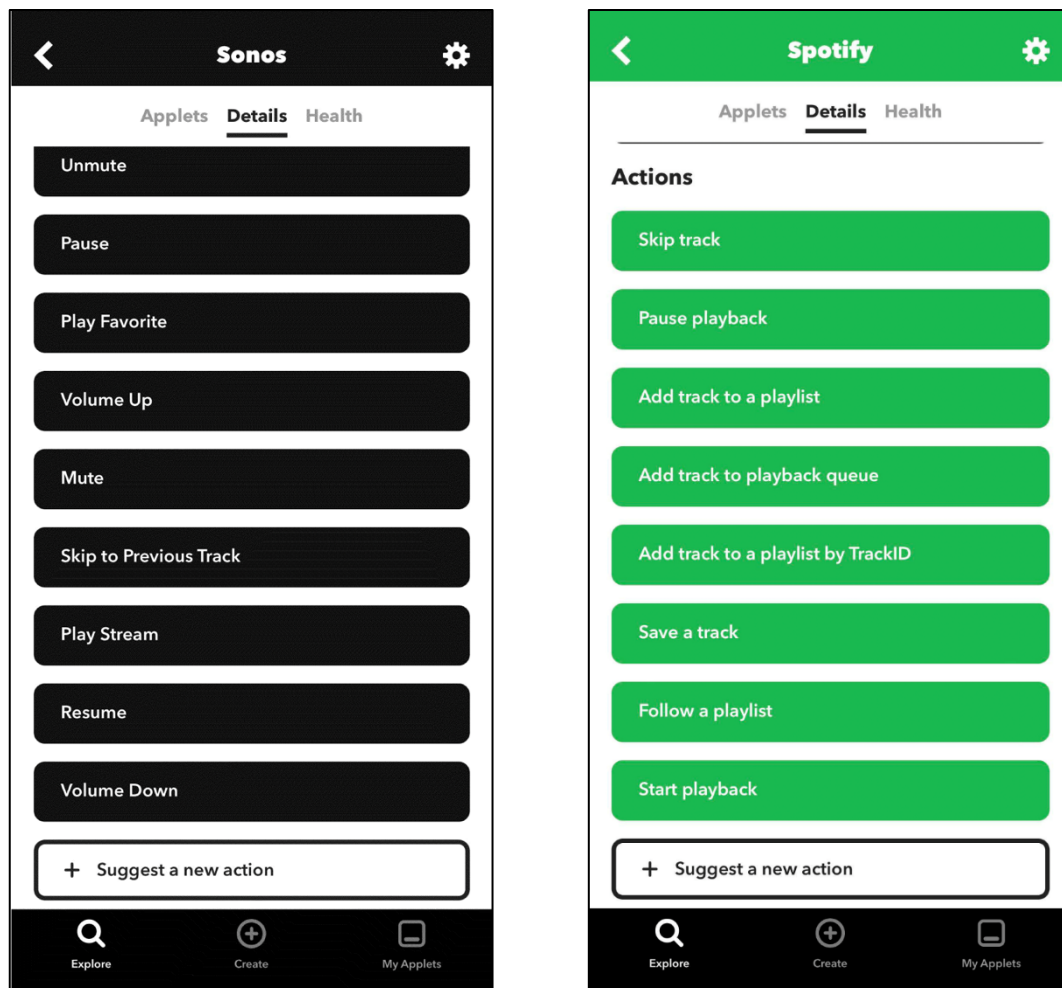
1 way to integrate apps, devices, and services.” *See* SONOS-SVG2-00224846-850. To provide
2 such integration, IFTTT offers “Applets” that have “a combination of triggers and actions that can
3 be combined to create the automations that help you achieve your goals, be more efficient, and
4 improve your smart home.” *Id.* at 847. For example, a first IFTTT Applet can be programmed
5 and saved with routines or actions, which are executed with the press of a first button, to play
6 music on multiple smart speakers in a home. Similarly, a second Applet can be programmed and
7 saved with routines or actions, which are executed with the press of a second button, to play music
8 on at least one of the speakers in the first Applet together with at least one different speaker (not
9 included in the first Applet) in the same home.

10 799. To help with building an Applet, IFTTT offers pre-made triggers and actions. For
11 example, IFTTT offers a trigger called “Button press,” which is shown below:
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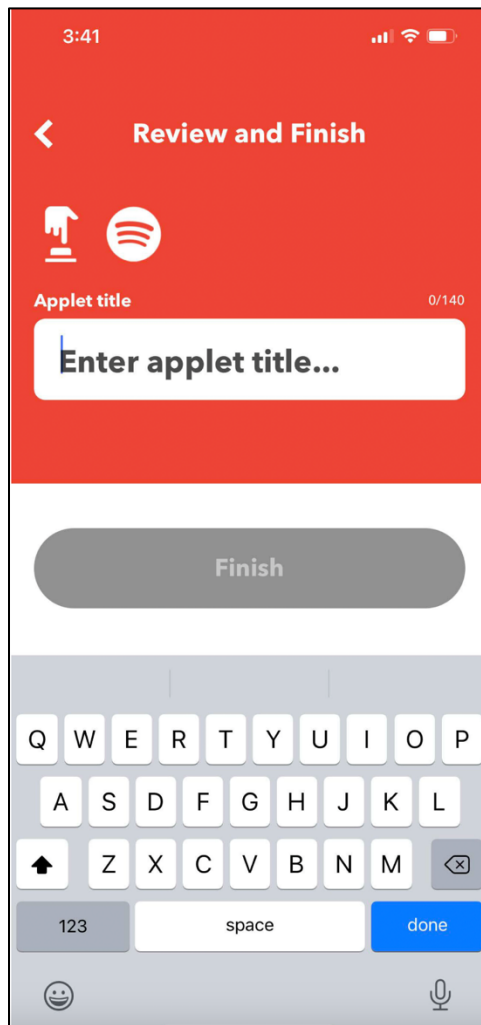
SONOS-SVG2-00233809.

800. As illustrated below, IFTTT also offers actions for controlling Sonos devices, including “Resume” playback, as well as for playing music on Spotify, such as “Start playback.”



See SONOS-SVG2-00227605-608 and SONOS-SVG2-00227613-16.

801. Using these pre-made offerings, an IFTTT user may build an Applet by choosing the “Button press” trigger, choosing an action for resuming or playing music on a first speaker, and choosing an action for resuming or playing music on a second speaker. Once a user has chosen the trigger and actions for his or her Applet, the IFTTT application allows the user to name and save the Applet, as shown below:



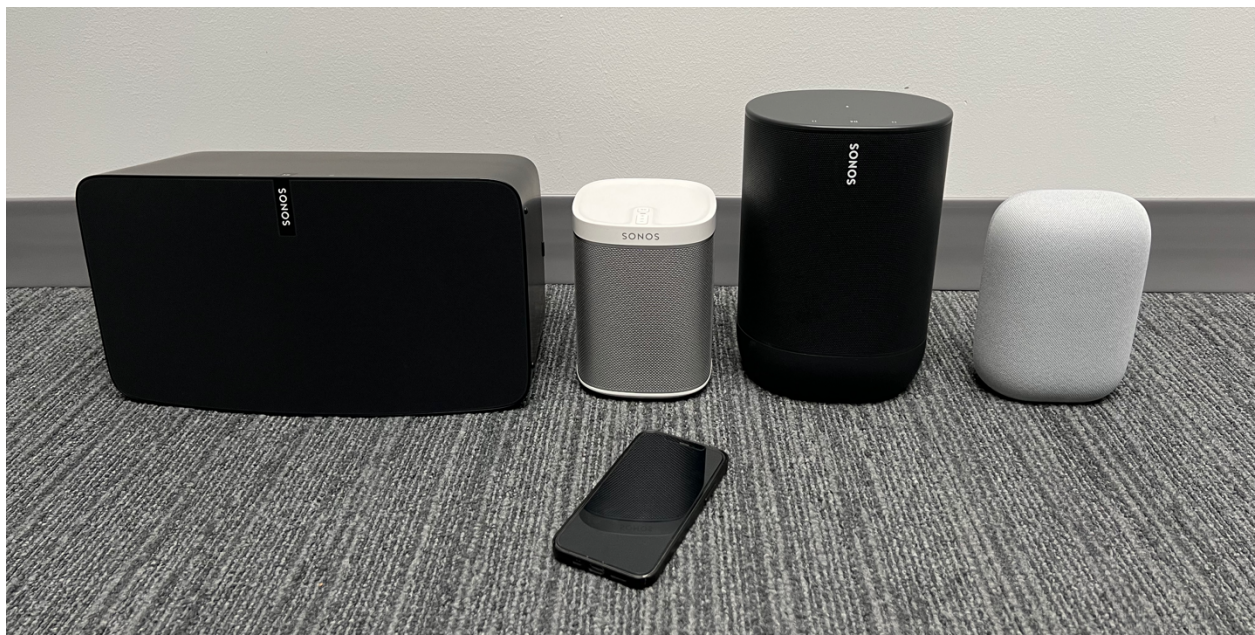
SONOS-SVG2-00227592.

802. Part of my analysis of IFTTT involved overseeing and directing certain testing to further understand its operation and functional capability. I memorialized my observations during this testing of a IFTTT networked audio system comprising an exemplary computing device installed with the IFTTT app and four exemplary players. In particular, the specific IFTTT networked audio system that was primarily used for testing, which I refer to as the “IFTTT test system,” included the following:

- An iPhone 12 Pro device running iOS version 16.1.1 that was installed with the IFTTT (version 4.50.0), Sonos S2 (version 14.9), and Spotify (version 8.7.82.107) apps for iOS (this was the same iPhone 12 Pro that was used in connection with the testing I described above for the 6/22/2022 Google test system, 11/30/2022 Google test system, and Sonos test system)

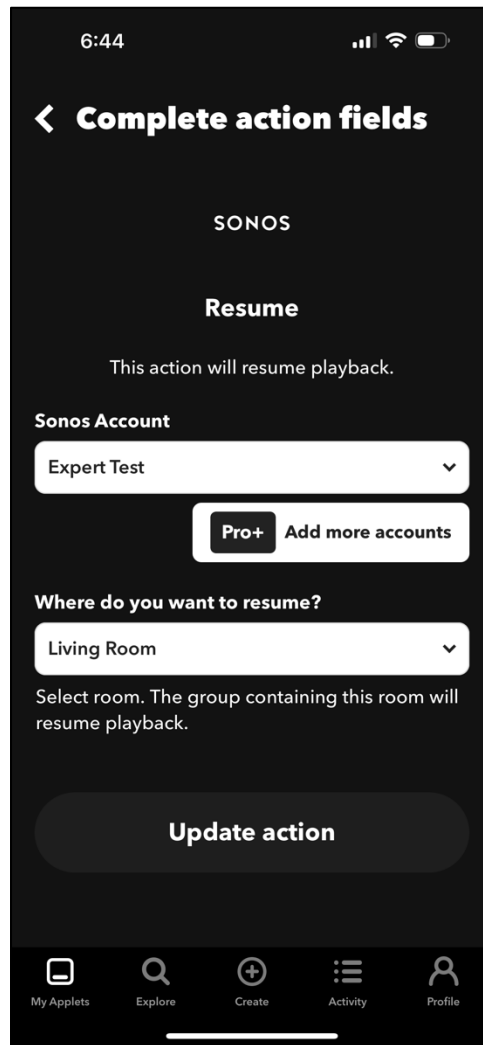
- A first Sonos player comprising a Play:5 player running firmware version 14.9, which was named “Kitchen” (this was the same Play:5 that was used in connection with the testing I described above for the Sonos test system)
- A second Sonos player comprising a Play:1 player running firmware version 14.9, which was named “Master Bedroom” (this was the same Play:1 that was used in connection with the testing I described above for the Sonos test system)
- A third Sonos player comprising a Move player running firmware version 14.9, which was named “Living Room” (this was the same Move that was used in connection with the testing I described above for the Sonos test system)
- A Google player comprising a Nest Audio player running Cast firmware version 1.56.313652, which was named “Dining Room” (this was the same Nest Audio player that was used in connection with the testing I described above for the 6/22/2022 Google test system and 11/30/2022 Google test system)

803. Below is a photograph of the exemplary computing device installed with IFTTT (version 4.50.0), Sonos S2 (version 14.9), and Spotify (version 8.7.82.107) apps for iOS, the three exemplary Sonos players, and the exemplary Google player in the IFTTT test system:



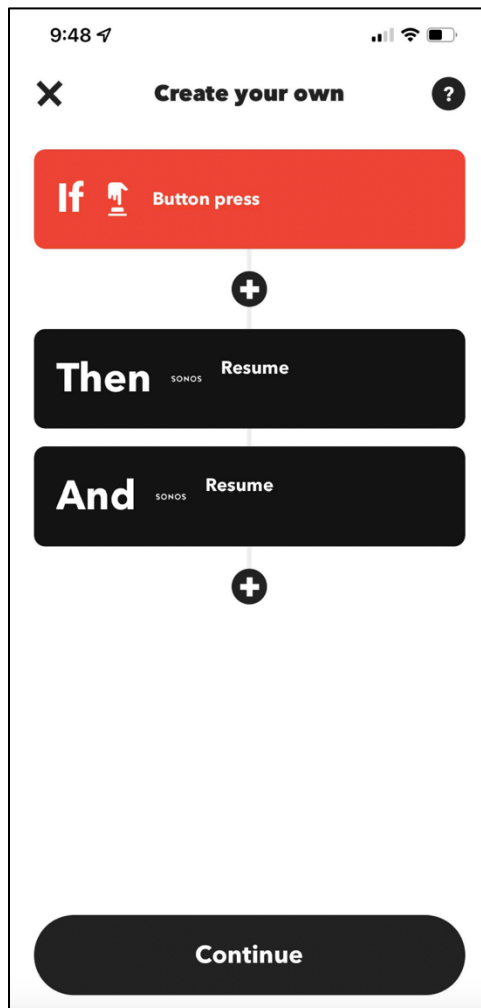
804. In the testing I oversaw, the IFTTT app on the iPhone 12 Pro was used to build several different IFTTT Applets for creating, saving, and invoking different groups of players (also referred to as “speakers” below). For instance, the process for building one such Applet involved

1 selecting the “Button press” trigger, then selecting the Sonos “Resume” playback feature for the
2 first action. This first action was also configured to resume playback on the Sonos “Living Room”
3 speaker in the IFTTT test system. Below is an illustration of this configuration:



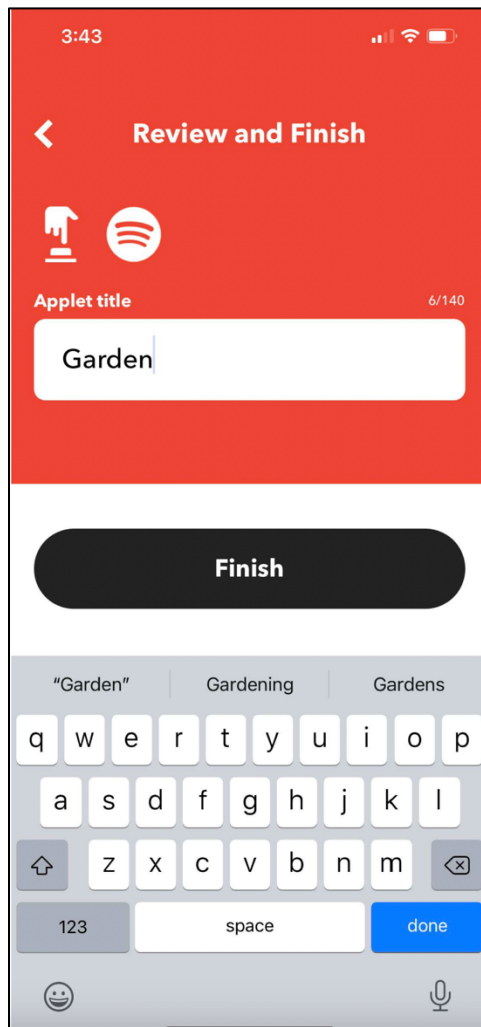
21 SONOS-SVG2-00233812.

22
23 805. Next, the Sonos “Resume” playback feature was selected again for the second
24 action. This second action was then configured to resume playback on the Sonos “Kitchen”
25 speaker in the IFTTT test system. Below is an illustration of the build for this Applet:



SONOS-SVG2-00227566.

806. After pressing the "Continue" button, the Applet was saved and named by typing "Garden" into the "Applet title" field and hitting the "Finish" button. Below is an illustration of this step:

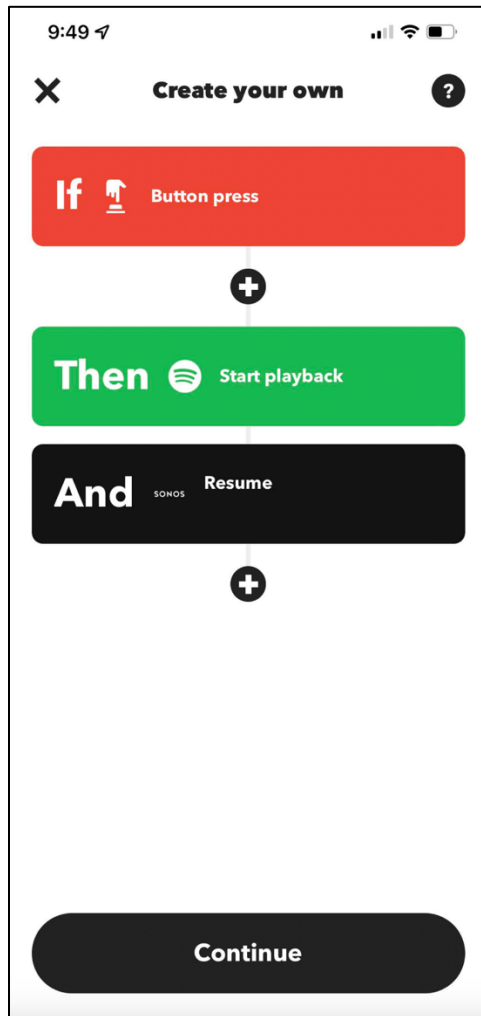


SONOS-SVG2-00227588.

807. This procedure was then repeated to build a second Applet that grouped the Sonos “Living Room” speaker with the Sonos “Master Bedroom” speaker in the IFTTT test system. This second Applet was named and saved “Evening.” SONOS-SVG2-00227586. Similarly, this procedure was repeated to build a third Applet that grouped the Sonos “Master Bedroom” speaker with the Sonos “Kitchen” speaker in the IFTTT test system. This third Applet was named and saved “Morning.” SONOS-SVG2-00227590.

808. A fourth Applet was then built by selecting the “Button press” trigger and then selecting the Spotify “Start playback” feature for the first action. The Spotify app was also configured on the iPhone to playback music to the Google “Dining Room” speaker in the IFTTT test system. Next, the Sonos “Resume” playback feature was selected for the second action. As with the “Garden” group, this second action was then configured to resume playback on the Sonos

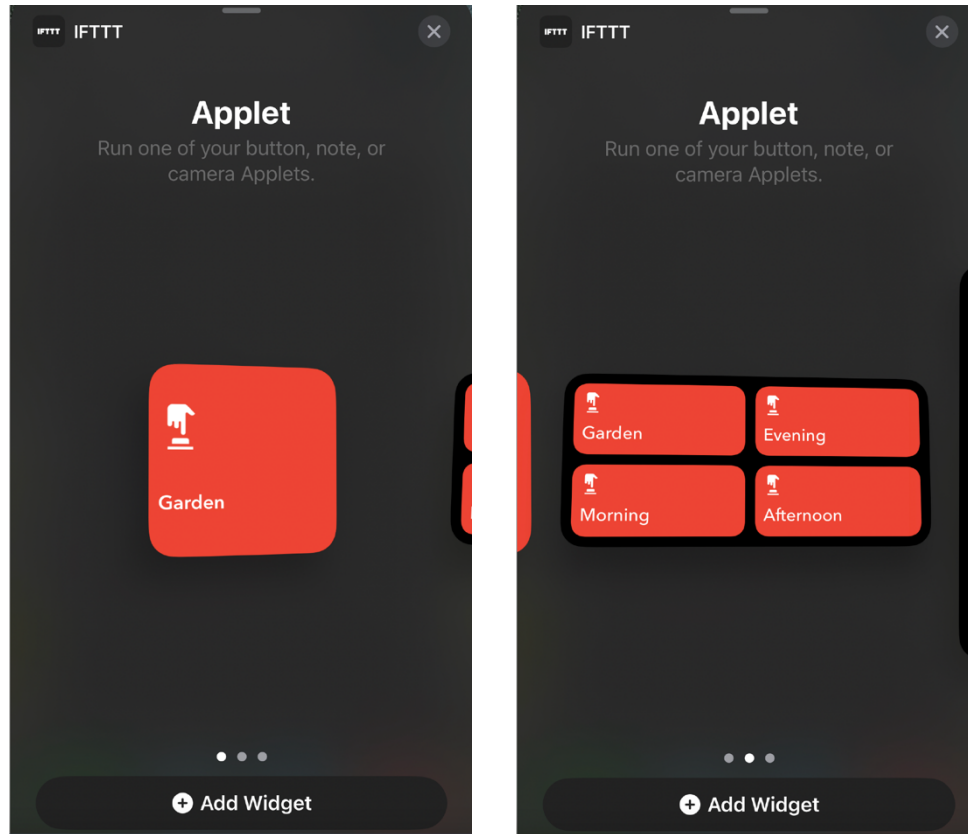
“Living Room” speaker in the IFTTT test system. Below is an illustration of the build for this Applet:



SONOS-SVG2-00227570.

809. After pressing the “Continue” button, the fourth Applet was then saved and named my by typing “Afternoon” into the “Applet title” field and hitting the “Finish” button. SONOS-SVG2-00227584.

810. Once the build for each of these Applets was completed, the Applets were added as “Widgets” to the iPhone 12 Pro’s “Home Screen.” The screenshots below illustrate how to add the “Widgets” to the iPhone 12 Pro’s “Home Screen”:



SONOS-SVG2-00233810; SONOS-SVG2-00233811.

811. Before running any of the Applets, the same song (“Naturally” by Selena Gomez) was added to the playback queue of each of the Sonos speakers in the “Garden,” “Evening,” and “Morning” Applets, as well as to the playback queue of the Spotify app on the iPhone 12 Pro. In this configuration, each of the Applets was run by tapping the corresponding Widget on the iPhone 12 Pro’s “Home Screen.” For example, as a result of tapping the “Garden” Widget, the “Garden” Applet was executed, causing the Sonos “Living Room” and “Kitchen” speakers to each resume playback of the same “Naturally” song. The same thing happened when the “Evening” and “Morning” Widgets were pressed – the corresponding Applets were executed and the “Naturally” song was played back by each of the speakers saved in each of the Applets. Similarly, when the “Afternoon” Widget was pressed, the “Afternoon” Applet was executed, causing (1) the Spotify app on the iPhone to playback the “Naturally” song on the Google “Dining Room” speaker and (2) the Sonos “Living Room” speaker to also playback the “Naturally” song.

812. As set forth above, multiple Applets may be built using one or more overlapping

1 speakers between the Applets. For example, the “Garden” Applet was built using the Sonos
2 “Living Room” and “Kitchen” speakers, while the “Evening” Applet was built using the Sonos
3 “Living Room” and “Master Bedroom” speakers.

4 813. As also previously explained, each speaker in an Applet may be set up to play back
5 the same song (e.g., the “Naturally” song) as the other speakers in that Applet.

6 814. In this regard, the IFTTT Applets are technologically comparable to the “zone
7 scene” technology claimed in the ’885 and ’966 Patents. That is, these Applets can be used to
8 create and save a predefined group of playback devices, such as speakers, that can later be invoked
9 to cause such devices to playback the same song. These saved groups can also be named according
10 to a common theme, such as “Garden,” “Morning,” “Afternoon,” and “Evening.” Moreover, the
11 Applets allow for these predefined groups to include overlapping playback devices and to be
12 capable of playing back the same song.

13 815. It should be understood, however, that the IFTTT Applets do not perform each and
14 every limitation of the claims of the ’885 and ’966 Patents and do not provide the full scope of
15 advantages explained above. As one non-limiting example, these Applets do not enable the
16 creation of groups of speakers that are “configured for synchronous playback of media” when
17 invoked, as required by limitations 1.6 and 1.7 of Asserted Claim 1 of the ’885 Patent and
18 limitations 1.5 and 1.7 of Asserted Claim 1 of the ’966 Patent. As such, unlike the ’885 and ’966
19 Patents’ claimed technology, the smart speaker groups created via these IFTTT Applets do not
20 provide the advantage of synchronous audio playback because the smart speakers in a group
21 created and invoked with an IFTTT Applet would have unwanted echo (e.g., echo caused by clock
22 drift between the smart speakers and/or echo caused by differences in the playback start time of
23 the audio on each smart speaker).

24 816. Nevertheless, it is my opinion that, while the technology incorporated into the
25 IFTTT Applets may be inferior to the claimed technology of the ’885 and ’966 Patents, the IFTTT
26 Applets are technologically comparable to the claimed “zone scene” technology of the ’885 and
27 ’966 Patents.

28 **XIX. DEMONSTRATIVES**

1 817. To help assist in my testimony at trial, I have prepared a number of demonstratives
2 that are attached hereto as **Exhibit Q**. These demonstratives are exemplary and I reserve the right
3 to create additional demonstratives and/or to modify the demonstratives in **Exhibit Q** based on the
4 material in this report. For example, I reserve the right to create additional demonstratives and/or
5 to modify the demonstratives in **Exhibit Q** based on the testing screenshots I included in this report
6 as well as the evidence cited in this report. I also reserve the right to rely on the demonstratives
7 that were attached as Exhibit H to my Opening report regarding Asserted Claim 1 of the '885
8 Patent dated June 22, 2022.

9 818. I have also reviewed Sonos's Technology Tutorial that provides an overview of the
10 '885 Patent, which I understand was submitted to the court in February 2022. I incorporate by
11 reference herein Sonos's Technology Tutorial and expressly reserve the right to use the
12 Technology Tutorial in whole or in part as a demonstrative to assist in my testimony.

13 **XX. RESERVATION OF RIGHT**

14 819. I reserve the right to further expound on my opinions set forth herein in subsequent
15 declarations, reports, and/or at trial.

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17
18 Dated: November 30, 2022

By: Kevin C. Almeroth
Kevin C. Almeroth